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SINCERITY -- A FORM OF EXPERIMENTER  
BIAS IN VERBAL CONDITIONING

by

David Eli Shapiro

A Thesis

Presented to the Graduate Committee

of Lehigh University

in Candidacy for the Degree of

Master of Science

in

Psychology

Lehigh University

1977

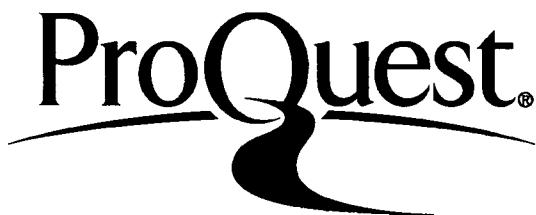
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This thesis is accepted and approved in partial fulfillment  
of the requirements for the degree of Master of Science.

May 6, 1977

(date)

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Professor in Charge

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Chairperson of Department

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Changing careers and reentering school would have been immeasurably harder without the support and encouragement of my family, especially Sheila.

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## Abstract

### SINCERITY -- A FORM OF EXPERIMENTER BIAS IN VERBAL CONDITIONING

by David Eli Shapiro

In verbal conditioning studies, the reinforcement often can be thought of as a show of concurrence, approval, or positive regard. Insincere reinforcement can be said to occur when it runs counter to the experimenter's personal inclinations. Two experiments tested the hypothesis that, other factors equated, subjects given more sincere reinforcement will achieve criterion behavior sooner or more completely. It was also expected that the Greenspoon effect would be found (shifts in the direction of overt reinforcement, regardless of bias).

In each experiment, assistants were asked to reinforce subjects' responses under conditions where that reinforcement was expected to be either congruent or incongruent with their biases. Assistants' effectiveness under those two conditions was determined by measuring the shift in their subjects' responses from baseline values.

### Experiment 1

All subjects participated as part of a requirement for introductory psychology. There were roughly equal numbers of men and women. Twenty-five subjects

participated in pretest. Of these, 20 participated further, and were designated "assistants"; they worked with forty subjects in the main experiment.

Experiment 1 used a 40-item questionnaire dealing with democratic versus autocratic family ideology. It was scored on a seven-point Likert-like scale. The instrument was divided into three sections, allowing for pretest (11 items), conditioning (11 items per form of test), and posttest (11 items) at one administration.

Each assistant administered the instrument to two subjects. In one case he or she reinforced responses more autocratic than the mean obtained on pre-administration to the assistants (who showed a generally democratic bias) and in the other case the assistant reinforced responses more autocratic than the mean. Scores for subject change were calculated by comparing their responses to items presented in the pretest and posttest sections of the instrument.

Subjects' change scores were correlated with assistants' own scores on the instrument. Significant ( $r = .468$ ,  $p < .05$ ) and near-significant ( $r = .302$ ,  $p < .2$ ) correlations were obtained for reinforcement in democratic and autocratic directions, respectively. The more

democratic the assistant, the more democratic a shift the subject showed, supporting the main hypothesis. A correlated t-test comparing shifts shown by the two subjects each assistant reinforced in opposite directions failed to support the Greenspoon effect.

### Experiment 2

This experiment used 160 non-volunteer male undergraduates. Those 80 subjects with relatively extreme scores on preadministration were designated "assistants"; the rest served as their subjects.

The attitude manipulated in this experiment was subjects' feelings on a current political issue. Subjects indicated their agreement with the proposition by marking a "Yes-No" line scale. Subjects also generated arguments on the proposition, and the percentage of pro arguments out of the total number was recorded.

Each assistant worked with one subject, reinforcing verbally presented arguments in only one direction: either arguments agreeing or disagreeing with the proposition.

There was no significant sincerity or Greenspoon effect, on either measure of attitude.

### General Discussion

The difference in results between the two experiments was most likely due to differences in amount of interaction between assistants and subjects. Implications are discussed.

## Sincerity and Experimenter Bias

### Sincerity -- a Form of Experimenter Bias in Verbal Reinforcement

There is a long tradition of research in the modification of verbal behavior, often with the use of a verbal reinforcer (Greenspoon, 1950, 1955). In verbal conditioning studies, the reinforcement often can be thought of as the show of concurrence, approval, or positive regard. The experimenter's degree of sincerity in conveying the reinforcement has not been thought of as affecting the efficacy of the reinforcement, and has therefore not been considered in the literature.

In the present studies, "insincere reinforcement" is said to occur when the reinforcement runs counter to the experimenter's personal inclinations, and may involve deceiving the subject about them. For instance, the experimenter may be indifferent to or even repelled by the production of personal pronouns, for instance, and yet try to shape such a response, by feigning approval.

Common notions about human interaction, as well as theories of and research in psychotherapy, suggest that sincerity is a worthwhile attribute. Sincerity is thought to help a person engaged in any social relations, including those involved in verbal conditioning. Carl Rogers has

## Sincerity and Experimenter Bias

found genuineness to be an important characteristic for people in the helping professions (Rogers & Dymond, 1954). Sincerity might be considered the "state" corresponding to the "trait" of genuineness. Berne (1961) claims that "plastic strokes," or insincere approval, are much less beneficial than "real strokes," and are readily recognized as insincere.

These ideas receive indirect support from some uncontrolled research by Key (1959). Key was interested in the "use of self in therapy." Hospital personnel such as "activity therapists" (e.g., dance therapists) were asked to simulate particular attitudes when dealing with certain patients, as a contribution to those patients' therapy. Two (not described) measures of patients' perceptions were then collected, to evaluate the success of the subterfuge. No significant differences were reported between different patients' perceptions of the attitude shown by a particular activity therapist, despite instructions to the therapist to behave differently towards the different patients. However, patients did perceive differences, significant at the .01 level, among different therapists (even though different therapists were supposed to be acting the same way towards a particular patient).

Key's report is very incomplete, comprising a general discussion of concept, procedure, and results, with many details omitted. There are also several conceptual weaknesses, which prevent drawing clear conclusions: there is no guarantee that personnel were sufficiently motivated; there is no way of knowing whether they understood their instructions the same way; and it is not reported whether the patients with whom they interacted had already formed expectations about the different therapists, on the basis of previous interaction or ward gossip. Nevertheless, this experiment does show a case where insincere attitude portrayals failed to deceive a client population.

Other indirect evidence for the possible importance of sincerity in both psychotherapy and verbal reinforcement, and for the relatedness of the two, can be found. For instance, Murray (1956) has shown by content analysis of interview protocols, and has verified by other techniques, that even "non-directive" counseling by an expert contains elements of verbal reinforcement. Truax (1966) offers similar findings. Patients exhibiting bizarre behavior, older patients, and patients from lower-class backgrounds are generally regarded as less amenable to therapy than are middle-class neurotics (Meltzoff &

## Sincerity and Experimenter Bias

Kornreich, 1970). To the extent that a therapist believes this widespread notion, he or she may behave differently with certain patients in such a way as to unconsciously sabotage therapy. Insincere verbal reinforcement may be the mechanism by which this self-fulfilling prophecy works.

Conditioning technology is consciously applied in behavior modification. Successive approximations to the goal behavior are shaped by conveying approval of each step closer to the goal. However, the first approximations, being similar to the initial behavior, might themselves be repugnant. For instance, it might be difficult to reward a pet, being paper-trained, for making a mess nearer the paper than it had previously. It may take a sophisticated therapist to reward a withdrawn patient for coming out of withdrawal by venting anger towards the therapist. Reinforcement at this stage might, in many cases, be less sincere and therefore less powerful than subsequent praise. This suggestion can only be tested when we have learned the behavioral concomitants of insincerity. It might be that behavior modification is more successful with therapists who can sincerely appreciate small improvements.

A situation analogous to that of therapist attitude is that of experimenter bias. Personal prejudices could



seriously bias the outcome of an experiment, just as could an outcome expectation. Previous studies of experimenter bias, however, have dealt mainly with experimental goals and outcome expectations, in a context that assumes neutral or consistent values (Lublin, 1965; Rosenthal, 1966; Kennedy, 1969; Burgess & Linder, 1970; Doctor, 1971; Page, 1971; Burgess & Theunissen, 1972).

The present study is an effort to assess the effects of sincerity on verbal conditioning. Sincerity is seen here as one process by which experimenter bias is conveyed. It is hypothesized that, other factors being equal, subjects being conditioned with more sincere reinforcement will achieve criterion behavior sooner or more completely.

Two experiments were performed. In each, I ascertained the biases of assistants on a socially relevant issue. Such issues lend themselves to meaningful disagreement and attempts at attitude change. Knowing assistant biases, I was able to measure their effectiveness in conditioning the responses of subjects under conditions of sincere or insincere reinforcement, by asking assistants to reinforce the sets of responses that were, respectively, consistent or inconsistent with the assistants' own biases. The first experiment uses a highly structured interaction

to test for experimenter bias in a situation analogous to objective psychometric testing. The second experiment uses a different issue, and a much less structured design; it is closer to a projective testing or clinical situation in that respect.

### Experiment 1

#### Method

Subjects. A total of 106 introductory psychology students participated in the two parts of Experiment 1, in order to fulfill a course requirement. One hundred and fifteen signed up and appeared for the experiment, but nine subjects were unable to complete the experiment because their partners failed to appear. Males were represented in a proportion of approx. 2:1 to females, over all groups.

Instrument Development. An instrument was used both to structure the assistant-subject interaction, and to provide data on amount of reinforcements and change in subjects' attitudes.

I chose the Traditional Family Ideology Scale (Levinson & Huffman, 1955) as the basis for my instrument. The test is composed of 40 statements about family and sex roles, with response options on a seven-point Likert-type scale ranging from +3, strong agreement, through 0, to -3, strong disagreement. The statements are conceived

## Sincerity and Experimenter Bias

of as favoring either autocratic or democratic ideological positions, and thus responses are conceived of as corresponding to positions on a continuum ranging from Democratic to Autocratic. The test is scored by adding a person's responses for items to which agreement constitutes an autocratic response, and subtracting the scores for democratic items. Thus, a positive score is conceived of as demonstrating autocratic bias in the area of family and sex roles.

This instrument was chosen for two reasons. First, I expected assistants to have strong biases about its subject matter, and I expected strong biases to have the greatest effect on sincerity of reinforcement. Second, I am sure that none of the subjects had prior exposure to the instrument. Family ideology has not been a major concern of testers, and this scale is not widely known.

The scale was first administered to 25 subjects, 16 men and 9 women, in a group setting. The responses were written privately, and therefore without reinforcement. This was done to find a baseline for the instrument, and also to calibrate (Rosenthal's term) these subjects, most of whom later served as assistants. Since verbal reinforcement data in this experiment are evaluated by comparing mean scores on

early versus late items, it was necessary to reduce any artifact due to question order. I compared the mean score on the first 11 items with the mean score on the last 11 items, to test for such instrument bias. The last 11 items had a more democratic mean, though it was not statistically significant. Correlated  $t$  (24) = .56, N.S.

To eliminate this difference, I reordered the questions. First I rearranged them in order of pre-administration means. Starting at one end of the range, I assigned items sequentially to several groups. This ensured that groups of items were matched in terms of item scores. Within each group, items were rearranged randomly. One group of 11 questions became the pretest section of the final instrument; 18 items were used in the middle, conditioning section; and the final group of 11 items became the posttest section.

Three forms were prepared (Appendices A, B, and C). Form A, for the no-reinforcement condition, merely listed the questions, along with basic administration instructions for the assistant, and scales (+3 to -3) on which he or she recorded the subject's responses. Forms B and C\*

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\* "C" can be used as a mnemonic for "conservative," hence autocratic.

had, respectively, democratic and autocratic response choices in the conditioning section outlined in green ink, indicating that such responses were to be reinforced.

For Forms B and C, 12 of the 18 items in the middle section were keyed for contingent reinforcement. Six items were keyed only on Form B, six only on Form C, and six others were keyed on both forms (with opposite response choices keyed on the two forms). The different patterns of keying were used to keep the purpose of the experiment hidden from the assistants. Doctor (1971), among others, has pointed out the undesirable effects of subjects' being aware of the experimenter's goals, where such awareness can modify their responses.

Each item was keyed according to the mean response to it by the 25 subjects during preadministration. The democratic item, "Women have as much right as men to sow wild oats" will serve as an example. Suppose the preadministration mean on this item were +1.24 and the item were keyed for reinforcement on both form B and C. On Form C, responses of +1, 0, -1, -2, and -3 would all be outlined in green, since they were all more autocratic than the mean response to the item.

The preadministration means and medians were close

to each other, and so there was no problem with choosing the mean as the measure of central tendency. Keying for reinforcement on either side of item means rather than around zero was done in order to increase the sensitivity and accuracy of the procedure. Keying items on either side of zero might have resulted in much more reinforcement being given during Form B administration, since responses to the democratic side of zero were much more common.

Procedure. Approximately two weeks elapsed between preadministration and the experiment proper. Twenty of the 25 subjects who had participated in the preadministration phase agreed to serve as assistants in this next part. Each assistant administered Form B to one subject and Form C to another, with the order determined randomly. This was done in a double-blind manner with respect to preadministration scores. Assistants also did not know the significance of "Form B" or "Form C."

I asked assistants to administer the instrument with even affect and no feedback, except for the keyed parts. The assistant read each item out loud, his or her subject responded, and the assistant then marked the space corresponding to the response. If the space was outlined in

green, this cued the assistant to reward the subject with subtle verbal reinforcement, of whatever sort the assistant thought would be effective.\*

I had two reasons for asking assistants to use subtle techniques. Denner (1970) has found that "crafty," or subtle, reinforcers are more successful. Crafty reinforcement may avoid notifying the subject that someone is trying to control him or her. The other reason is that subtle reinforcement may not be standardized as readily as is overt reinforcement. While using overt reinforcement I am more likely to decide on one specific method of reinforcement and use it repeatedly.

Each assistant's mean score on the Traditional Family Ideology items during preadministration was used as his or her bias score. This score indicated how sincerely he or she would offer the reinforcement specified by each of the forms.

### Results and Discussion.

Post-experimental inquiry revealed that the purpose of the experiment was not guessed by either the assistants or their subjects. The emphasis on subtlety in administering reinforcement apparently was successful.

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\*In post-experimental inquiry, assistants reported using techniques ranging from eye contact to saying "yes."

## Sincerity and Experimenter Bias

The main data consisted of subjects' change scores. The instrument consisted of a pretest section, comprising the first 11 questions; a conditioning section, during administration of which subjects underwent the designated experimental manipulation, and a posttest section, consisting of the final 11 questions. Each change score was obtained by subtracting a subject's pretest section score from his or her posttest section score.

I correlated assistants' scores with their subjects' change scores. Using the scores of Form B subjects (who had been reinforced in the democratic direction) I obtained a Pearson  $r(18) = .468$ ,  $p < .05$ . I repeated the test with Form C data (reinforcement in the autocratic direction), obtaining  $r(18) = .302$ ,  $.1 < p < .2$ . The more democratic an assistant, the more democratic shift his or her subject showed.\* This confirmed my hypothesis.

This effect appears to be more pronounced under Form B administration than with Form C. However, a Fisher  $r$  to  $z$  transformation (Hays, p. 662) shows that the probability that a difference of this magnitude between correlations

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\* $r$ 's are positive, because a low TFI score indicates that an assistant is democratic, and a low or negative change score shows democratic shift.



## Sincerity and Experimenter Bias

could occur by chance is approximately 70%. Thus, the slight difference in correlations could easily be attributed to residual effects, such as random differences in subject samples.

The grand mean on preadministration, across items and across future assistants, was -1.28, and no assistant had a score to the autocratic side of zero. This suggests that administration of Form B, when more democratic response alternatives were reinforced, may have constituted the more sincere condition of reinforcement for all assistants. Similarly, Form B may well have specified conditioning in the direction more compatible with subjects' biases, too, since subjects and assistants were drawn from the same population. Furthermore, under Form B administration, subjects gave more responses that fell in the keyed areas than they did under Form C; out of a maximum of 12 possible designated reinforcements under each condition, assistants administered a mean of 6.1 to Form B subjects, and 4.85 to Form C subjects. (This difference, however, only yields a correlated  $t(19) = .5$ , N.S.) If one assumes that subjects were influenced by assistants primarily during designated reinforcement, rather than during administration of the approximately 34 other items, this suggests that Form C

subjects were subject to less influence.

Forms B and C were expected to result in different overall shifts in subject responses. If the Greenspoon effect occurred, reinforcing responses in the autocratic direction (Form C) should produce autocratic shifts, and Form B should produce democratic shifts. Given significantly less reinforcement, one might expect Form C subjects to show less of an autocratic shift than Form B subjects showed a democratic shift. However, both Forms B and C resulted in mean shifts (over subjects) in the democratic direction: Form B,  $-.505$  and Form C,  $-.236$ \* I subtracted the change score of each assistant's Form B subject from that of his or her Form C subject, to see if there was a significant difference in the shifts, attributable to the Greenspoon effect. The mean difference was  $.268$ , and I obtained  $t(19) = 1.73$ ,  $.05 < p < .10$ , 2-tailed.

There are several possible explanations for this failure to reach significance. First, the Greenspoon effect may have been absent. This would indicate that even with administrators who were ineffective in following instructions to influence verbal behavior,

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\*The shifts are measured here by subtracting a subject's mean score on the first 11 items from his or her score on the last 11 items.

## Sincerity and Experimenter Bias

their biases caused them to influence their subjects sufficiently to result in significant or near-significant correlations between assistant bias and subject change scores. A second possibility is that the sincerity effect itself was enough to wash out the Greenspoon effect, by causing all subjects to show response shifts in the democratic direction regardless of overt reinforcement -- because assistants and probably subjects were democratically biased. It seems unlikely that an instrument effect was present, since on preadministration the mean shift from the first 11 items to the last 11 was only  $-.64$ ,\* and an effort was made to reduce even that effect by reordering the questions.

To test the possibility that assistants' biases could influence their subjects, even without the presence of an overt, Greenspoon-type manipulation, I ran a control condition, after the experiment proper. I used 23 pairs of subjects, who had no previous contact with the experiment. Those that I randomly designated "assistants" administered Form A, the no-reinforcement condition, to their partners. They were instructed merely to read the

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\*This is in spite of the possibility of bias shown in the reading of the questions, on preadministration. I read them, and my TFI score is  $-2.11$ .

questions aloud, with even affect and no feedback, and to note their partners' responses on the 7-point Likert-type scales.

The mean shift in their subjects' responses, from the first 11 items to the last 11, was -3.6, correlated  $t(22) = 2.40, p < .05$ , 2-tailed. Without overt reinforcement from assistants there was still a strong democratic shift in their subjects' responses. The shift was much larger than that produced in preadministration, when there was no opportunity for covert or unaware feedback (since preadministration was done in a group setting, where the administrator could not know what responses were being made). I have no direct test of the bias of these control group assistants, but they did come from the same population as those used in the experiment proper. The mean shift they produced was midway between those that appeared under Form B and Form C administration. That ranking may reflect a baseline bias effect, which was modified by the Greenspoon effect under Form B and C administration. The findings of Experiment 1 are summarized in Table 1.

There were four reasons for running Experiment 2. First, since sincerity is a newly demonstrated bias effect, I wanted to replicate my findings. Second, I wanted to use a less-instrument-bound framework, one more similar to

## Sincerity and Experimenter Bias

ordinary human interaction, or at least to a structured interview. Third, I wanted to use a format that was more sure to measure attitude change. Experiment 1 judged attitude change on the basis of verbal production, which may reveal compliance rather than true attitude change. (It is still of interest if subjects just show verbal compliance to prejudices that assistants are not aware of revealing.) Lastly, Experiment 2 is designed to use an issue which divides the population at the instrument's zero point. That way, I am able to dichotomize my assistants into two groups with opposite biases, and use analysis of variance.

### Experiment 2

#### Method

**Subjects.** Over 220 male undergraduates were asked to be in the experiment, as part of their course obligations. Of these, just 160 were able to complete it, due to scheduling problems and other factors considered in the Discussion section. Half of the participants were designated as assistants, as described under Procedure. Males alone were used in order to control the possible effects of sex.

**Instrument Development.** Potential subjects filled out a questionnaire at home (Appendix D). It contained four questions of popular interest, two of which were items

taken from the Traditional Family Ideology Scale. Each question was on a separate page. Under the question was an undifferentiated 16 cm line scale ranging from "YES" to "NO" on which subjects marked their degree of agreement with the question. They were instructed to list below the scale as many arguments as they could think of related to the issue, including arguments favoring both sides of the question. Arguments were to be numbered sequentially, and each was to begin with "YES," or "NO," so that I could judge its direction by the subject's standards.

Opinion indicated on the scale was scored by measuring the number of centimeters a mark was from "YES." I analyzed these preliminary data to determine which issue inspired the most arguments, and which most evenly divided the population in terms of "YES-NO" scale scores. They were the same issue: "Will Carter be a better president than Ford?" (The questionnaire was administered shortly after the 1976 elections, but before Carter took office.)

Procedure. The subjects whose responses were in the lowest or highest six centimeters of the scale were designated, respectively, "Pro" or "Con" assistants. People with responses toward the center of the scale

served as their subjects. Each assistant worked with one subject. Half of the Pro assistants and half of the Con assistants were instructed to reinforce "Yes" arguments, and half to reinforce "No" arguments. Assistants were randomly assigned to the two directions of reinforcing. Table 2 shows the mean assistant questionnaire score in each cell; mean assistant scores for the two directions of reinforcement are nearly identical.

There was a wait of from one day to a month between questionnaire return and the experiment proper. Designated assistants and subjects were called in at the same time. After they were matched, they introduced themselves and sat down. The assistant then read instructions (Appendix E) to the subject, telling him to verbally present as many arguments as he could think of, on both sides of the question, "Will Carter be a better president than Ford?" As arguments were offered, the assistant recorded their number and direction, and subtly reinforced arguments in the direction I had designated in my instructions to him. Afterwards, the assistant and subject filled out preliminary debriefing forms. (so called because they did not inform the subject fully about the experiment; this was done later by mail).

During the preliminary debriefing, each subject

again responded on the "YES-NO" scale concerning the question, "Will Carter be a better president than Ford?" This provided a measure of subjects' opinion changes, when compared with their original responses on the take-home questionnaire. I also asked subjects and assistants about what actually took place besides the simple reading of instructions, and subject presentation of arguments. I asked assistants what specific types of reinforcement they had used, and I asked both subjects and assistants what hypotheses they had formed regarding the experiment's purpose, and whether they had come away with any strong feelings about the experiment. The preliminary debriefing forms are included as Appendices F and G. Part of the purpose of the debriefing questions was to see how instructions had been carried out.

### Results

Subjects were grouped according to whether they were reinforced by a "Pro" or "Con" assistant, in the "Yes" or "No" direction. Thus there were four groups: "Pro-Yes," "Con-Yes," "Pro-No," and "Con-No," each consisting of 20 assistant-subject pairs.

Two measures of conditioning were used. The first data consisted of the distance in centimeters from "YES" for each subject on the preliminary, take-home questionnaire, minus the distance from "YES" of his response on the



again responded on the "YES-NO" scale concerning the question, "Will Carter be a better president than Ford?" This provided a measure of subjects' opinion changes, when compared with their original responses on the take-home questionnaire. I also asked subjects and assistants about what actually took place besides the simple reading of instructions, and subject presentation of arguments. I asked assistants what specific types of reinforcement they had used, and I asked both subjects and assistants what hypotheses they had formed regarding the experiment's purpose, and whether they had come away with any strong feelings about the experiment. The preliminary debriefing forms are included as Appendices F and G. Part of the purpose of the debriefing questions was to see how instructions had been carried out.

### Results

Subjects were grouped according to whether they were reinforced by a "Pro" or "Con" assistant, in the "Yes" or "No" direction. Thus there were four groups: "Pro-Yes," "Con-Yes," "Pro-No," and "Con-No," each consisting of 20 assistant-subject pairs.

Two measures of conditioning were used. The first data consisted of the distance in centimeters from "YES" for each subject on the preliminary, take-home questionnaire, minus the distance from "YES" of his response on the

## Sincerity and Experimenter Bias

post-experimental debriefing sheet. A positive number meant a shift toward Carter. Thus, I expected the most positive data from the "Pro-Yes" group. These data were intended to measure attitude change. Since only I and the subject saw the responses, subjects would have little reason to be dishonest. This is in contrast to the measure used in Experiment 1, which depended on verbal responses to assistants' questions.

Data for the second measure of conditioning consisted of the percentage of "Yes" arguments out of total arguments on the "Carter-Ford" question that a subject listed on the preliminary questionnaire, subtracted from a similar percentage calculated from the assistant's record of arguments offered by the subject during the conditioning session. Again, a positive number means a shift towards Carter. These data were intended to measure verbal compliance, since arguments were being differentially reinforced as they were recorded. Group means are listed in Table 3 for scale scores and Table 4 for percentage of arguments scores.

Planned comparisons were used to analyze the data. The patterns of the comparisons are presented in Table 5.  $\psi_1$  tests the effect of sincerity of assistants conditioning in the "Yes" direction.  $\psi_2$  tests the effect of sincerity of assistants conditioning in the "No"

direction.  $\psi$  3 tests for the presence of the Greenspoon effect, combining Pro-biased and Con-biased assistants. Results of these analyses are shown in Table 6, for scale data, and Table 7, for percentage of arguments data. No significant differences were found using the planned comparisons, with either set of data. Indeed, some results were in a direction counter to that expected.

This is a rather different outcome from Experiment 1. To see if the difference in results stemmed from using different statistics in Experiment 2, I reanalyzed the data using correlations. As in Experiment 1, I correlated assistant bias (as measured by score on the "YES-NO" scale) with the shift in subject attitude (also measured on the "YES-NO scale). I also correlated assistant bias (shown on the scale) with change in percentage of arguments. I did separate correlations for "Yes" direction and "No" direction conditioning, as in Experiment 1. The findings are presented in Table 8; again there were no significant results. This result is despite selection of assistants who had extreme scores, which should inflate the correlations beyond those of Experiment 1.

A factor which might have had an impact on these outcomes is the amount of opportunity for interaction that

each dyad had. One measure of this is the number of arguments presented, and the number of reinforcements administered. Table 9 present these data. The mean number of arguments presented was 6.94, and the mean number of arguments to be reinforced was only 3.61. The implications of this somewhat lower number of reinforcement opportunities are considered below.

A second difference between the two experiments arises in possible departures from the design in Experiment 2 reported by both assistants and subjects. In Experiment 2, two or three subjects in each 20-subject treatment group indicated that they were aware of thereinforcement contingency. Another two to four subjects in each group noticed reinforcement after some arguments, but did not perceive the specific contingent relationship. Several assistants revealed that they had reinforced responses in both directions, rather than just those they were instructed to reinforce. There were three such cases in the "Con-No" group, two in the "Pro-No" group, five in the "Con-Yes" group, and four in the "Pro-Yes" group. (By contrast, subjects and assistants in Experiment 1 did not report any deviations from the design aside from being able to overhear other dyads on occasion.)

General Discussion

The two correlations performed in Experiment 1 suggest that there is a positive relationship between an assistant's sincerity and his or her ability to alter a subject's responses. The results of Experiment 2 fail to support the earlier findings.

The criterion to which I will continually refer in comparing the two studies is whether a particular characteristic makes the experiment a better or worse analog to real-world situations such as psychotherapy. I will also consider what the differences in both design and outcome for the two studies suggest for future research in this area.

The simplest possible explanation for the difference between Experiments 1 and 2 is Type I or Type II error. I do not believe that either set of results is a fluke, for specific reasons. Experiment 2 involved so many tests, all with null results, that it seems extremely unlikely for the null hypothesis actually to have been false under the circumstances being tested. Alternatively, the results in Experiment 1 could have been caused by Type I error. The degree of correlation was relatively small. The best test of this possibility would be an exact replication of Experiment 1. As it stands, there certainly were enough

## Sincerity and Experimenter Bias

differences between Experiments 1 and 2 to provide alternate explanations for the variation in results.

One basic difference is that Experiment 1 used males and females as assistants and subjects, while Experiment 2 was limited to males. However, inspection of the data from Experiment 1 showed that male-male pairs responded about the same as the overall population, so I do not think this had much of an effect -- unless this change in the human environment altered the atmosphere of the experiment in some other important way, such as allowing the subjects to take their roles less seriously. There were many other differences in atmosphere.

Student motivation appeared to be high in Experiment 1. They seemed eager to participate, because they were anxious to fulfill their course obligation, and avoid possible penalty. In Experiment 2, changes in departmental subject pool procedure made it easier for subjects to avoid participation. Well over 220 subjects were assigned to the study, but I was only able to use 160, due to scheduling problems, no - shows, and failure to complete the forms properly. While most of the subjects finally used seemed happy with and interested in the project, a number were patently uncooperative or

indifferent. In each cell, 15-25% of the pairs violated a basic condition of the design, as reported above. Although in both experiments subjects participated in order to fulfill course obligations, in Experiment 1 they volunteered for my particular study, while in Experiment 2 they were assigned to it.

Neither subject population participated in order to obtain help with personal problems, so it cannot be said that their motivation was like that of clients for therapy, counseling, or personal change groups. What can be said is that motivation appeared higher in Experiment 1, and Experiment 2 dealt with a more mixed group of subjects.

Other differences in motivation may have arisen out of the design itself. Experiment 1 involved an instrument which could be answered with less social risk: in Experiment 2, subjects were in a sense being asked to predict the performance of an incoming president, putting themselves on the line about an issue which could shortly be resolved. It is quite possible that this resulted in their choosing to be relatively non-committal, offering relatively few arguments in the face-to-face setting, despite the effect of prior practice.

Similarly, assistants may have been somewhat half-hearted about offering reinforcement around such an issue.

This could explain why there was no statistical trend supporting the presence of even the Greenspoon effect. In Experiment 2, assistants were also less experienced than in Experiment 1. The first Experiment involved repeated measures (over assistants), so half of the subjects in Experiment 1 were conditioned by an experienced assistant. Also, the within-subject design used in Experiment 1 tends to be more powerful.

In Experiment 2, assistants may also have been under more pressure. Those in Experiment 1 had a much more mechanical task, since the instrument provided structure, and they were merely to reinforce keyed responses. Experiment 2 gave the assistants more responsibility, since they were explicitly told the direction of overt conditioning, thus making their goal clear. This information may also have helped them avoid the intrusion of their own biases.

Both experiments involved very short-term interactions between assistants and subjects, an interaction quite different from what most helping personnel would use, or at least prefer. In Experiment 1, the subject responded to a total of 40 statements, in less than 15 minutes. In Experiment 2, the subject offered an average of 1/6 that



many statements. In Experiment 2, the mean number of official reinforcements was also lower. These may be key differences, since assistants presumably had fewer occasions to influence their subjects in the second experiment. In support of this notion, in Experiment 1 there was this type of difference between Form B and Form C administration: more designated reinforcement was administered under Form B administration than under Form C, (Although the difference was not statistically significant) and indeed sincerity may have had a somewhat greater effect on subjects' responses under Form B administration.

The difference in tasks used in the two experiments also affected their time structure. In Experiment 1, assistants fired off questions which were simple to respond to. Experiment 2 may have been more similar to a therapy setting, in that the subjects had to think of things to say. McGee (1967) has shown, in a slightly different setting, that if a person takes his or her time for decisions, responses are less likely to show acquiescence. Thus, pacing could have been another factor in the failure of Experiment 2 to demonstrate conditioning.

There was also a special demand characteristic associated with Experiment 2. I was afraid lest insufficient communication would take place to provide an opportunity for conditioning (a factor controlled by the

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There was also a special demand characteristic associated with Experiment 2. I was afraid lest insufficient communication would take place to provide an opportunity for conditioning (a factor controlled by the

## Sincerity and Experimenter Bias

instrument in Experiment 1). Consequently, I particularly emphasized, both overtly and otherwise, that subjects produce all the arguments they could think of, and specifically asked for arguments on both sides of the issue. Possibly as a consequence, nearly 1/5 of the assistants reported encouraging argument production in both directions, which confused the reinforcement contingencies.

The multitudinous differences between Experiments 1 and 2 prevent me from drawing clear implications, either for future research or for the validation of the concepts on which my hypothesis was based. If I were to draw up a plan of continued study, the next step would be an exact replication of Experiment 1. I would, however, have the same assistants run a no-reinforcement control condition. First, the negative results of Experiment 2 cast some question on the reliability of my original findings. Second, even the consistency of results across such things as population makeup and motivation, which would vary on replication, would be worth checking.

Assuming that the Experiment 1 results were confirmed, I would have some confidence that a new approach to the study of experimenter bias had been developed. This would also provide some experimental support for the emphasis on sincerity of such humanistic theorists as Rogers and Berne.

## Sincerity and Experimenter Bias

The next step in further studying this phenomenon would be to vary some of the parameters of Experiment 1. The overall amount of interaction could be decreased by shortening the instrument, and the amount of designated reinforcement could be decreased by keying fewer items. If a more up-to-date test measuring similar attitudes were employed, it would be possible to again test a population which was divided around a zero point; this would combine some of the strengths of Experiments 1 and 2. A longer instrument would also allow more opportunity for conditioning.

Only by getting a series of meaningful results can we hope to develop a methodology to study sincerity. This area combines the concerns of personality measurement, opinion change, and experimenter effects, each of which offers unique problems to research: measuring bias, providing an adequate setting for interpersonal influence, and measuring opinion change. The two experiments in this study provide a first approach to these problems.

## Sincerity and Experimenter Bias

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## Sincerity and Experimenter Bias

Table 1

### Findings of Experiment 1

#### Correlations of Assistant Bias with Shifts in Subject Responses

	<u>Form B</u> <u>(Reinforce democratic)</u>	<u>Form C</u> <u>(Reinforce autocratic)</u>
Correlation Coefficient	.468	.302
Significance (2-tailed)	$p < .05$	$.1 < p < .2$
<u>Mean Number of Reinforcements</u>	6.10	4.85
<u>Mean Shift over Administration</u>	-5.55	-2.60

#### Form A (No designated reinforcement)

Mean shift = -3.6

$t(22) = 2.4$

$p < .05$  2-tailed

#### Greenspoon Effect -- difference between shift under Form B and Form C

Mean difference = 2.95

$t(19) = 1.73$

$.05 < p < .1$ , 2-tailed

## Sincerity and Experimenter Bias

Table 2

Mean Questionnaire Score of Assistants in Experiment 2\*

<u>Direction of Reinforcement</u>		
Bias	"Yes"	"No"
Pro	3.9	3.7
Con	13.8	13.7

Note: Neutral point is 8.5.

\* Distance from "YES" in Cm.



## Sincerity and Experimenter Bias

Table 3

Mean Shift Towards "YES" on Scale in Centimeters  
in Experiment 2

<u>Bias of Assistants</u>	<u>Type of Arguments Reinforced</u>	
	<u>Yes</u>	<u>No</u>
Pro	-.30	-.95
Con	.70	.15

## Sincerity and Experimenter Bias

Table 4

Mean Increase in Percent of "Yes" Arguments  
in Experiment 2

<u>Bias of Assistants</u>	<u>Type of Arguments Reinforced</u>	
	Yes	No
Pro	12.35	3.20
Con	1.40	1.75

---

# Sincerity and Experimenter Bias

Table 5

## Planned Comparisons Used in Experiment 2

Assistant Bias	Direction of Reinforcement	
	Yes	No
Pro	A	B
Con	C	D

---

Comparison	Cell			
	A	B	C	D
$\psi_1$	(+1,	0,	-1,	0)
$\psi_2$	( 0,	+1,	0,	-1)
$\psi_3$	(-1,	+1,	-1,	+1)

# Sincerity and Experimenter Bias

Table 6

## Analysis of Variance of Shifts on "Yes-No" Scale in Experiment 2

Source	SS	d.f.	MS	F
$\psi$ 1 Sincerity - "No" condit.	12.1	1	12.1	2.23
$\psi$ 2 Sincerity - "Yes" condit.	10.0	1	10.0	1.85
$\psi$ 3 Greenspoon Effect	7.8	1	7.8	1.40
Error	412.15	76	5.4	

Note: No significance was found

# Sincerity and Experimenter Bias

Table 7

## Analysis of Variance of Shifts in Percent of "Yes" Arguments in Experiment 2

<u>Source</u>	<u>SS</u>	<u>d.f.</u>	<u>MS</u>	<u>F</u>
Ψ 1 Sincerity - "No" conditioning	160	1	160	.39
Ψ 2 Sincerity - "Yes" conditioning	1199	1	1199	2.96
Ψ 3 Greenspoon Effect	387	1	387	.96
Error	30780	76	405	

Note: No significance was found

Table 8

•

Correlations Between Assistant Bias and Change in  
Subjects' Responses in Experiment 2

Direction of Conditioning.

"Yes"

Change on Yes-No scale:  $\underline{r} = .21$

Change in percent of Pro arguments:  $\underline{r} = .19$

"No"

Change on Yes-No scale:  $\underline{r} = .11$

Change in percent of Pro arguments:  $\underline{r} = .03$

Sincerity and Experimenter Bias

Table 9

Mean Number of Arguments Presented in Experiment Two, by  
Cell (Numbers in Parentheses Indicate Number of Arguments  
Designated for Reinforcement.)

Bias	<u>Direction of Conditioning</u>	
	"Yes"	"No"
Pro	5.95 (2.75)	7.90 (4.20)
Con	7.50 (4.10)	6.40 (3.40)

## Appendix A

### Forms Used in Control Condition of Experiment 1



"I will read you forty statements with which you may agree or disagree. Counting strong disagreement as -3, neutrality as 0, and strong agreement as plus 3, please give me the number corresponding to your response after each statement (-3, -2, -1, 0, 1, 2, or 3). Please answer seriously."

[illegible]

Faithlessness is the worst fault a husband could have.

Whatever some educators may say, "Spare the rod and spoil the child " still holds, even in these modern times.

A teen-ager should be allowed to decide most things for himself.

It is a woman's job more than a man's to uphold our moral code, especially in sexual matters.

The unmarried mother is morally a greater failure than the unmarried father.

It helps the child in the long run if he is made to conform to his parents' ideas.

Women should take an active interest in politics and community problems as well as in their own families.

A marriage should not be made unless a couple plans to have children.

The most important qualities of a real man are

-3	-2	-1	0	1	2	3	strength of will and determined ambition.
							The family is a sacred institution, divinely ordained.
							Alot of sex problems of married couples arise because their parents have been too strict with them about sex.
							Women can be too bright for their own good.
							There is alot of evidence such as the Kinsey report which shows we have to crack down harder on young people to save our moral standards.
							It is a reflection on a husband's manhood if his wife works.
							The saying, "Mother knows best" still has more than a grain of truth.
							It doesn't seem quite right for a man to be a visionary; dreaming should be left to women.
							A well-raised child is one that doesn't have to be told twice to do something.
							A child should not be allowed to talk back to his parents, or else he will lose respect for them.
							If children are told too much about sex, they are likely to go too far in experimenting with it.
							A wife does better to vote the way her husband does, because he probably knows more about such things.
							It isn't healthy for a child to like to be alone, and he should be discouraged from playing by himself.
							A man who doesn't provide well for his family ought to consider himself pretty much a failure as husband and father.
							It goes against nature to place women in positions of authority over men.
							Women have as much right as men to sow wild oats.
							Women who want to remove the word "obey" from the marriage ceremony don't understand what it means to be a wife.
							It is only natural and right for each person to think that his family is better than any other.
							In choosing a husband, a woman would do well to put ambition at the top of her list of desirable qualities.
							A woman whose children are messy or rowdy has failed in her duties as a mother.
							Women think less clearly than men and are more emotional.
							It's a pretty feeble sort of man who can't get ahead in the world.
							Even today women live under unfair restrictions that ought to be done away with.
-3	-2	-1	0	1	2	3	

-3-2-1 0 1 2 3


-3-2-1 0 1 2 3

One of the worst problems in our society today is "free love," because it mars the true value of sex relations.

A child who is unusual in any way should be encouraged to be more like other children.

Almost any woman is better off in the home than in a job or profession.

In making family decisions, parents ought to take the opinions of children into account.

Petting is something a nice girl wouldn't want to do.

YOUR NAME \_\_\_\_\_

SUBJECT'S NAME \_\_\_\_\_

## Appendix B

Forms Used in Experiment 1  
Keyed for Reinforcement of  
Democratic Responses

PLEASE KEEP THIS BRIEFING CONFIDENTIAL

This experiment involves the conditioning effects of subtle positive reinforcement. I would like you to read the questions to your subject in an even, neutral manner, as I tried to last week. Enter their responses by putting an "x" in the appropriate box by each question. Some possible responses are circled. When an answer falls into this category, I want you to say "uh-huh" or "mmm" or if the subject is looking at you, nod, or whatever you think will subtly convey a sense of approval, before proceeding to the next question.

Please do not show this sheet to the subject or discuss this briefing. (Read the following out loud to the subject)

"I will read you forty statements with which you may agree or disagree. Counting strong disagreement as -3, neutrality as 0, and strong agreement as plus 3, please give me the number corresponding to your response after each statement (-3, -2, -1, 0, 1, 2, or 3). Please answer seriously."

-3	-2	-1	0	1	2	3	
							It is important to teach the child as early as possible the manners and morals of his society.
							Faithlessness is the worst fault a husband could have.
							There is hardly anything lower than a person who does not feel a great love, gratitude and affection for his parents.
							Whatever some educators may say, "Spare the rod and spoil the child" still holds, even in these modern times.
							Some equality in marriage is a good thing, but by and large the husband ought to have the main say-so in family affairs.
							A teen-ager should be allowed to decide most things for himself.
							A man can scarcely maintain respect for his fiance if they have sexual relations before they are married.
							It is a woman's job more than a man's to uphold our moral code, especially in sexual matters.
							The unmarried mother is morally a greater failure than the unmarried father.
							It helps the child in the long run if he is made to conform to his parents' ideas.
							Women should take an active interest in politics and community problems as well as in their own families.
							A marriage should not be made unless a couple plans to have children.
							The most important qualities of a real man are

-3-2-1 0 1 2 3

[illegible]

The family is a sacred institution, divinely ordained.

Alot of sex problems of married couples arise because their parents have been too strict with them about sex.

There is alot of evidence such as the Kinsey report which shows we have to crack down harder on young people to save our moral standards.

The saying, "Mother knows best" still has more than a grain of truth.

A well-raised child is one that doesn't have to be told twice to do something.

If children are told too much about sex, they are likely to go too far in experimenting with it.

It isn't healthy for a child to like to be alone, and he should be discouraged from playing by himself.

It goes against nature to place women in positions of authority over men.

Women who want to remove the word "obey" from the marriage ceremony don't understand what it means to be a wife.

In choosing a husband, a woman would do well to put ambition at the top of her list of desirable qualities.

Women think less clearly than men and are more emotional.

Even today women live under unfair restrictions that ought to be done away with.

53 15

-3 -2 -1 0 1 2 3


-3 -2 -1 0 1 2 3

One of the worst problems in our society today is "free love," because it mars the true value of sex relations.

A child who is unusual in any way should be encouraged to be more like other children.

Almost any woman is better off in the home than in a job or profession.

In making family decisions, parents ought to take the opinions of children into account.

Petting is something a nice girl wouldn't want to do.

YOUR NAME \_\_\_\_\_

SUBJECT'S NAME \_\_\_\_\_

First \_\_\_\_\_ Second \_\_\_\_\_

Do you think the subject knew something was going on? \_\_\_\_\_

Do you think the subject knew what was going on?

What are some of the things you used as reinforcers? \_\_\_\_\_

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## Appendix C

Forms Used in Experiment 1  
Keyed for Reinforcement of  
Autocratic Responses



PLEASE KEEP THIS BRIEFING CONFIDENTIAL

This experiment involves the conditioning effects of subtle positive reinforcement. I would like you to read the questions to your subject in an even, neutral manner, as I tried to last week. Enter their responses by putting an "x" in the appropriate box by each question. Some possible responses are circled. When an answer falls into this category, I want you to say "uh-huh" or "mmm" or if the subject is looking at you, nod, or whatever you think will subtly convey a sense of approval, before proceeding to the next question.

Please do not show this sheet to the subject or discuss this briefing. (Read the following out loud to the subject)

"I will read you forty statements with which you may agree or disagree. Counting strong disagreement as -3, neutrality as 0, and strong agreement as plus 3, please give me the number corresponding to your response after each statement (-3, -2, -1, 0, 1, 2, or 3). Please answer seriously."

-3-2-1 0 1 2 3

							It is important to teach the child as early as possible the manners and morals of his society.
							Faithlessness is the worst fault a husband could have.
							There is hardly anything lower than a person who does not feel a great love, gratitude and affection for his parents.
							Whatever some educators may say, "Spare the rod and spoil the child " still holds, even in these modern times.
							Some equality in marriage is a good thing, but by and large the husband ought to have the main say-so in family affairs.
							A teen-ager should be allowed to decide most things for himself.
							A man can scarcely maintain respect for his fiancée if they have sexual relations before they are married.
							It is a woman's job more than a man's to uphold our moral code, especially in sexual matters.
							The unmarried mother is morally a greater failure than the unmarried father.
							It helps the child in the long run if he is made to conform to his parents' ideas.
							Women should take an active interest in politics and community problems as well as in their own families.
							A marriage should not be made unless a couple plans to have children.
							The most important qualities of a real man are

-3-2-1 0 1 2 3

-3 -2 -1 0 1 2 3

strength of will and determined ambition.

The family is a sacred institution, divinely ordained.

Alot of sex problems of married couples arise because their parents have been too strict with them about sex.

Women can be too bright for their own good.

There is alot of evidence such as the Kinsey report which shows we have to crack down harder on young people to save our moral standards.

It is a reflection on a husband's manhood if his wife works.

The saying, "Mother knows best" still has more than a grain of truth.

It doesn't seem quite right for a man to be a visionary; dreaming should be left to women.

A well-raised child is one that doesn't have to be told twice to do something.

A child should not be allowed to talk back to his parents, or else he will lose respect for them.

If children are told too much about sex, they are likely to go too far in experimenting with it.

A wife does better to vote the way her husband does, because he probably knows more about such things.

It isn't healthy for a child to like to be alone, and he should be discouraged from playing by himself.

A man who doesn't provide well for his family ought to consider himself pretty much a failure as husband and father.

It goes against nature to place women in positions of authority over men.

Women have as much right as men to sow wild oats.

Women who want to remove the word "obey" from the marriage ceremony don't understand what it means to be a wife.

It is only natural and right for each person to think that his family is better than any other.

In choosing a husband, a woman would do well to put ambition at the top of her list of desirable qualities.

A woman whose children are messy or rowdy has failed in her duties as a mother.

Women think less clearly than men and are more emotional.

It's a pretty feeble sort of man who can't get ahead in the world.

Even today women live under unfair restrictions that ought to be done away with.

$-3 -2 -1 0 1 2 3$

-3 -2 -1 0 1 2 3


-3 -2 -1 0 1 2 3

One of the worst problems in our society today is "free love," because it mars the true value of sex relations.

A child who is unusual in any way should be encouraged to be more like other children.

Almost any woman is better off in the home than in a job or profession.

In making family decisions, parents ought to take the opinions of children into account.

Petting is something a nice girl would n't want to do.

YOUR NAME \_\_\_\_\_

SUBJECT'S NAME \_\_\_\_\_

First \_\_\_\_\_ Second \_\_\_\_\_

Do you think the subject knew something was going on? \_\_\_\_\_

Do you think the subject knew what was going on?

What are some of the things you used as reinforcers? \_\_\_\_\_

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## Appendix D

### Preliminary Questionnaire Used in Experiment 2

1

2

# ATTITUDE RESEARCH EXPERIMENT      DAVID SHAPIRO

I alone will see the data from this questionnaire; it will be kept confidential. Put your name and personal data only on this page. Keep the pages together, stapled or in an envelope. Print your initials in the upper right-hand corner of each page. Because I am coding around 230 of these questionnaires, PRINT or TYPE your responses. Please turn this in by Monday, November 15, to D. Shapiro's mailbox, in Room 105, Williams Hall. In a few weeks, after the data have been analyzed, you will be asked to participate in the second part of this study.

name \_\_\_\_\_ Initials \_\_\_\_\_

mailing address \_\_\_\_\_

\_\_\_\_\_

Phone no. \_\_\_\_\_

In the schedule blank, black out \_\_\_\_\_

times you are unavailable for \_\_\_\_\_

Part 2.

	Mon	Tue	Wed	Thu	Fri
9-10					
10-11					
11-12					
12-1					
1-2					
2-3					
3-4					
4-5					
5-6					

Each item on the following pages, starting with an example, consists of a question, an opinion scale, and room for your written arguments. First put a clear mark on the scale, corresponding to your opinion on the question. The more strongly you agree with the "yes" position, the closer your mark should be to the YES end. The more strongly you agree with the "no" position, the closer your mark should be to the NO end.

Next write down all the arguments you can think of on both sides of the question. The arguments can be deep or trivial, independent or related. For my convenience, number your arguments, so that I know where each one leaves off and the next begins. Start each argument with "yes" or "no," so that I clearly understand whether it is pro or con.

There is no bonus for filling an entire page with arguments, but please complete all four items. Please work independently.

EXAMPLE: Should student housing be allotted completely at random

YES

NO

ARGUMENTS

1. No, that makes it harder to build a sense of community, when you can lose your home or neighbors by chance.
2. Yes, people should first of all have an equal chance to be live-in members of the community.
3. Yes, people would move out, anyway.
4. No, they are less likely to move if they feel stable in their present locale, not subject to lotterized eviction.
5. No, I would hate to face a lottery every year.
6. No, completely random selection doesn't consider special needs.
7. Yes, it would keep kids stirred up, make them find places on their own.
8. No, it's a lousy way to treat people.
9. Yes, most other approaches are just as bad.

Initials \_\_\_\_\_

Should women be granted abortion on demand?

YES \_\_\_\_\_ NO

Initials \_\_\_\_\_

Is a person who doesn't have a great love and respect for parents  
very low ?

YES \_\_\_\_\_ NO



Initials\_\_\_\_

Will Carter be a better president than Ford?

YES \_\_\_\_\_ NO

Initials \_\_\_\_\_

Is faithlessness the worst fault a husband can have ?

YES \_\_\_\_\_ NO

## Appendix E

### Instructions to Assistants in Experiment 2

## PLEASE READ THIS THROUGH

At this point in the experiment, I am asking you to become my confederate. As always, if anything I ask is repugnant, you have the option of withdrawing from the research. In any event, these instructions and the experimental procedures must be kept confidential.

One student will be your subject. When he gets here, I will assign you a cubicle. Sit down in the cubicle and begin by reading him the following instructions:

This is the second part of the Attitude research experiment, in which you were presented with four questions, marked your opinion about each one on the accompanying yes-no scale, and listed a few arguments on both sides of the issues.

Now I am asking you to again express arguments on both sides of an issue, all the arguments you can think of. Since you have seen the question before, you probably will have more ideas this time. Your arguments may be old or new, deep or trivial, independent or related. They may be based on facts or possibilities, on certainty or on speculation.

This time, instead of writing the arguments down, tell them to me. Please speak clearly, but not so loud as to be heard by other subjects who may be next door. Again, please indicate where each short argument begins and ends by numbering them or by saying something like "Another argument is, 'yes, '...'". Again start each argument with "yes" or "no."

The question is, "Will Carter be a better president than Ford?" Arguments like "I see no difference" are inappropriate. Speculate.

After each argument, please put down a plus sign in the appropriate column on your own paper, depending on whether he said it was a "yes" argument or a "no" argument.

This experiment involves the conditioning of verbal behavior. That means that by rewarding a class of behaviors we encourage the subject to increase production of those behaviors. In this case we want to increase the number of " " arguments he produces.

Each time your subject states a " " argument, indicate approval by nodding your head, saying, "uh-huh," or whatever subtle technique you think might be encouraging without being very blatant. Responding to arguments by saying, "That is correct" might seem a bit strange to your subject.

Give your subject plenty of time. When you are sure he has finished, both of you should come to me for further instructions. After the experiment is complete, I will explain this manipulation to all the subjects.

Thank you.

David Shapiro

## Appendix F

### Preliminary Subject Debriefing Used in Experiment 2

1

## Preliminary Debriefing

Thank you for your participation. There are a number of questions I would like you to answer, to help me know what actually took place during this experiment. Please print your responses on the paper I've given you.

1) In this part of the experiment, exactly what did you and your partner do? Particularly, what did he do besides read you the instructions, and what did you do besides offer arguments as instructed?

2) What do you think the purpose of this experiment is? Was this hypothesis in your mind as you participated? Do you have any strong feelings about the experiment?

Participation in the subject pool is supposed to be educational. It shows you what an actual experiment is like, and it enables me to do research which furthers the field you are studying. You have a right to know what this particular research is attempting to do, and what I find. Unfortunately, I cannot tell you these details until all subject-pairs have participated in the experiment. Furthermore, I will not finish analyzing the data until vacation or next semester, at which time it will appear in my Master's thesis.

A few weeks from now, I will write up an explanation of my design, although I won't have results yet. If you would like me to mail you a discussion then, please address the accompanying envelope to yourself. You might also pick up the discussion from me at the Psychology Department.

Until then, please do not discuss the experiment. Your knowledge and ideas could alter the results I obtain from other subjects.

## Appendix G

### Preliminary Assistant Debriefing Used in Experiment 2



ASSISTANTS  
Preliminary Debriefing

Thank you for your participation. There are a number of questions I would like you to answer, to help me know what actually took place during this experiment. Please print your responses on the paper you used to record the pluses for arguments.

1) In this part of the experiment, exactly what did you and your partner do? Particularly, what things did you do to encourage him to produce arguments of the type I asked? How did he respond? Do you think this technique was effective? Do you think he realized what you were doing?

2) What do you think is the purpose of this experiment? Was this hypothesis in your mind as you participated? Do you have any strong feelings about the experiment?

Participation in the subject pool is supposed to be educational. It shows you what an actual experiment is like, and it enables me to do research which furthers the field which you are studying. You have a right to know what this particular research is attempting to do, and what I find. Unfortunately, I cannot tell you these details until all subject-pairs have participated in the experiment. Furthermore, I will not finish analyzing the data until vacation or next semester, at which time it will appear in my Master's thesis.

A few weeks from now, I will write up an explanation of my design, although I won't have results yet. If you would like me to mail you a discussion then, please address the accompanying envelope to yourself. You might also pick up the discussion from me at the Psychology Department.

Until then, please do not discuss this experiment; your knowledge and ideas could alter the results I obtain from other subjects.

## Vita

David Eli Shapiro was born February 7, 1950 in Bronx, New York to Louis Leonard Shapiro and Lillian Shapiro, now Lillian Yithra Ciner. He attended Jewish parochial schools for most of his primary schooling, and graduated from Christopher Columbus High School in Bronx, New York. He was selected to attend a National Science Foundation Physics - Mathematics - Computer Summer Institute for high school students.

Entering the State University of New York at Buffalo on a Regents Scholarship and a Scholar Incentive Award, he initially majored in Engineering. Exposure to the Human Potential Movement engendered an interest in psychology. He received the Bachelor of Arts in Psychology in 1971.

Following graduation, he spent a few years doing electrical construction, before entering Lehigh in Fall, 1975. Since admission, he has been a teaching assistant for courses Introductory Psychology and in Statistics.

He is a member of the Association for Humanistic Psychology and has student standing with several divisions of the American Psychological Association.